

ABSTRACT OF THE DISCLOSURE

[0001] A drive circuit produces a drive signal for a device having a piezoelectric actuator. In some example embodiments, the drive circuit dynamically changes the drive signal (e.g., a shape of the waveform of the drive signal) during real time operation of the device. In the same or distinct other example embodiments, the drive circuit generates the drive signal in accordance with an analog input signal to the drive circuit. The analog input signal can be or bear, for example, an indication of resonance of the piezoelectric actuator; an indication of temperature; an indication of viscosity; and/or, an indication of one of a desired voltage and a desired frequency of the drive signal. The analog input signal can be obtained from a user input device. In the same or distinct other example embodiments, the drive circuit generates the drive signal in dependence upon an operational parameter of the device. The operational parameter of the device can be a sensed parameter such as, for example, resonance of the piezoelectric actuator or temperature of fluid. In the same or distinct other example embodiments, the drive circuit generates the drive signal so that a waveform of the drive signal is shaped in dependence upon a sensor signal which is obtained from a sensor. The sensor may be situated internal in the device (e.g., in a pump chamber), elsewhere in or proximate the device, or in or proximate a served device to which is serviced by the device. Method of operations for the drive circuits and devices utilizing the drive circuits and operating according to the method are also disclosed.